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09/664,001	09/18/2000	Masahito Tomizawa	032590-071	4632

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EXAMINER	
DUONG, FRANK	
ART UNIT	PAPER NUMBER
2666	

DATE MAILED: 12/29/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/664,001	TOMIZAWA ET AL.	
	Examiner	Art Unit	
	Frank Duong	2666	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *13 August 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-35* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-16,26,29,35 and 332* is/are rejected.

7)☒ Claim(s) *17-25,27,28,30 and 31* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *13 August 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. This Office Action is a response to the communications dated 08/13/04. Claims 1-35 are pending in the application.

Drawings

2. The drawings were received on 08/13/04. These drawings are approved

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-16, 26, 29 and 32-34 are rejected under 35 U.S.C. 102(b) as being anticipated by Doshi et al (IP over SONET, IEEE, pages 136-142, May 1998) (hereinafter "Doshi").

Regarding **claim 1**, in accordance with Doshi reference entirety, Doshi discloses a transport system (*Figure 6*) comprising:

time division multiplexing means (left side of WDM/TM) applying time division multiplexing (TDM) of a whole signal of a client including client overhead transparently (*Figure 6; Backbone router node and page 138, left column, second paragraph; Payload Transparency*) and

attaching means (not shown; inherent) for attaching an additional overhead (SONET overhead) to said whole signal of said client (*page 141, left column, second paragraph, Doshi discloses in TDM systems, capacity scaling is achieved by increasing the rate of transmission*); and

wavelength division multiplexing means (WADM for transporting a time-division-multiplexed signal represented by one wavelength containing an additional overhead from one network (*Figure 6; left-side WADM*) to another network (Figure 6; *right-side WADM)* by applying wavelength division multiplexing *(page 141, left column, second paragraph, Doshi discloses with WDM, capacity scaling is done by transmitting multiple TDM signals, each with a different wavelength, on the same fiber).*

Regarding **claim 2**, in addition to features recited in base claim 1 (see rationales discussed above), Doshi further discloses wherein said transport system is an optical transport system (*Figure 6*).

Regarding **claim 3**, in addition to features recited in base claim 1 (see rationales discussed above), Doshi further discloses wherein said additional overhead contains bits defining frame synchronization or channel selection (*page 137, left column; byte stuffing or page 139, left column, second paragraph; scrambler state*), and an insertion cycle of said bits is shorter than a frame cycle of client signals (*pages 138-139; discussion of dealing with malicious user*).

Regarding **claim 4**, in addition to features recited in base claim 1 (see rationales discussed above), Doshi further discloses wherein said additional overhead contains

bits defining error correction (FEC), and said system performs error correction (*page 139; left column; FEC*).

Regarding **claim 5**, in addition to features recited in base claim 4 (see rationales discussed above), Doshi further discloses wherein quality degradation of the signal or failure detection is performed by an error correction bit counter (*not shown; inherent as disclosed on page 139, left column, last two paragraph and page 140, right column, fourth paragraph*).

Regarding **claim 6**, in addition to features recited in base claim 1 (see rationales discussed above), Doshi further discloses wherein said additional overhead contains bits defining data storage for applying negative stuffing to adjust a frequency of a client clock, and positive stuffing is applied by inserting said bits in a payload (*not shown; inherent in SONET byte stuffing technique; page 140, left column, IP over SONET Beyond OC-48 section*).

Regarding **claim 7**, in addition to features recited in base claim 6 (see rationales discussed above), Doshi further discloses wherein said additional overhead contains bits defining stuffing information (*page 140, left column, IP over SONET Beyond OC-48 section*).

Regarding **claim 8**, in addition to features recited in base claim 1 (see rationales discussed above), Doshi further discloses wherein said time division multiplexing is based on bit interleaving or byte interleaving (*page 137, right column, second paragraph*).

Regarding **claim 9**, in addition to features recited in base claim 1 (see rationales discussed above), Doshi further discloses wherein said system contains option means for enabling each client to select automatic restore function for line failure (*page 141, right column, third paragraph; means for link rates and page 142, left column; fast restoration under failure*).

Regarding **claim 10**, in addition to features recited in base claim 1 (see rationales discussed above), Doshi further discloses wherein said system directly accommodates a LAN interface from a client terminal and has a routing function for routing between low speed interfaces or to a low speed interface of an opposing apparatus (*page 141; Figure 6, Backbone router node and the interfaces disclosed therefrom*).

Regarding **claim 11**, in addition to features recited in base claim 10 (see rationales discussed above), Doshi further discloses wherein said time division multiplexing is performed after mapping low speed signals received from a client terminal to respective high speed channels (*page 141; Figure 6, Backbone router node and the interfaces disclosed therefrom*).

Regarding **claim 12**, in addition to features recited in base claim 1 (see rationales discussed above), Doshi further discloses wherein control of monitoring of input/output operations of low speed client signal is performed by analogue means (*page 140, left column, last paragraph*).

Regarding **claim 13**, in addition to features recited in base claim 1 (see rationales discussed above), Doshi further discloses wherein said system is a ring type network (*page 141, right column, last paragraph*).

Regarding **claim 14**, in addition to features recited in base claim 13 (see rationales discussed above), Doshi further discloses wherein a cross connecting switch for selecting signal paths is comprised by a selector (*page 142, left column, third paragraph, Doshi discloses cross connecting switch. It is inherent the switch comprises a signal path selector*).

Regarding **claim 15**, in addition to features recited in base claim 13 (see rationales discussed above), Doshi further discloses wherein sub-network monitoring for one ring network is based on a simple network management protocol, known as SNMP (not shown; inherent because *SNMP is a standard management protocol in SONET network or packet network*).

Regarding **claim 16**, in addition to features recited in base claim 1 (see rationales discussed above), Doshi further discloses wherein, for multiplexing synchronized and non-synchronized signals (*page 141, right column; OC signals and IP, ATM*), said system is provided with a synchronizing section for attaching said additional overhead to a digital signal for use in positive and negative stuffing and synchronizing the digital signal to a frequency of a network synchronizing clock to generate a synchronized digital signal (*not shown; inherent in Figure 6, WADM*); and a time division multiplexing section for time division multiplexing of the synchronized digital signal (*WDM TM*).

Regarding **claim 26**, in addition to features recited in base claim 1 (see rationales discussed above), Doshi further discloses wherein said system includes: a synchronization section for inserting an additional overhead to a digital signal, and applying positive stuffing according to said additional overhead so as to synchronize client frequency to an apparatus frequency (*Figure 6; WADM*); a time division multiplexing section for time division multiplexing the synchronized digital signal (*WDM TM*); and a multi/demultiplexing section for demultiplexing time division multiplexed synchronizes signal so as to restore an original digital signal (*Figure 6; at the receiving end*).

Regarding **claim 29**, in addition to features recited in base claim 26 (see rationales discussed above), Doshi further discloses wherein multiplexed signals are further subjected to optical time division multiplexing (Figure 6).
A transport system according to claim 27, wherein multiplexed signals are further subjected to wavelength division multiplexing.

Regarding **claim 32**, in addition to features recited in base claim 29 (see rationales discussed above), Doshi further discloses wherein multiplexed signals are further subjected to wavelength division multiplexing (Figure 6).

Regarding **claim 33**, in accordance with Doshi reference entirety, Doshi discloses a transport method (*Figure 6*) for transporting wavelength division multiplexed signals (WADM) by applying time division multiplexing (TDM) of a whole signal of a client including client overhead transparently (*Figure 6; Backbone router node*) and attaching an additional overhead to said whole signal of said client (*page 141, left*

column, second paragraph, Doshi discloses in TDM systems, capacity scaling is achieved by increasing the rate of transmission) and transporting a time-division-multiplexed signal represented by one wavelength containing an additional overhead from own network (*Figure 6; left-side WADM*) to another network (Figure 6; *right-side WADM) (page 141, left column, second paragraph, Doshi discloses with WDM, capacity scaling is done by transmitting multiple TDM signals, each with a different wavelength, on the same fiber).*

Regarding **claim 34**, in addition to features recited in base claim 33 (see rationales discussed above), Doshi further discloses wherein, for multiplexing synchronized and non-synchronized signals, said method comprises additional steps of: adding an additional overhead to a digital signal, applying positive or negative stuffing according to overhead information, synchronizing a client frequency to a network frequency (*not shown; inherent in SONET byte stuffing technique; page 140, left column, IP over SONET Beyond OC-48 section*), and applying time division multiplexing (WDM TM) for transport of a digital signal to be demultiplexed by a receiving equipment to regenerate an original digital signal (Figure 6).

Regarding **claim 35**, in addition to features recited in base claim 33 (see rationales discussed above), Doshi further discloses wherein, for multiplexing synchronized and non-synchronized signals, said method comprises additional steps of: adding an additional overhead to a digital signal, applying positive stuffing according to overhead information, synchronizing frequencies (*not shown; inherent in SONET byte stuffing technique; page 140, left column, IP over SONET Beyond OC-48 section*), and

applying time division multiplexing (WDM TM) for transport of a digital signal to be demultiplexed by a receiving equipment to regenerate all original digital signal (Figure 6).

Allowable Subject Matter

4. Claims 17-25, 27-28 and 30-31 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: The prior art of record, considered individually or in combination, fails to fairly show or suggest the claimed invention of base claim 1 and further limits with novel and unobvious limitations as recited in the above dependent claims.

Response to Arguments

5. Applicant's arguments filed 08/13/04 have been fully considered but they are not persuasive. Applicants' arguments will be addressed hereinbelow in the order in which they appear in the response filed 08/13/04.

In the Remarks of the outstanding response, on page 16, pertaining the rejection under 35 U.S.C. § 102(b) of claims 1-16, 26, 29 and 32-35 as being anticipated by Doshi et al, Applicants argue "*As can be understood from the recitations of independent Claims 1 and 33, the present invention transports all the overheads a client signal including an overhead for a physical layer transparently. Through this feature, as*

explained for example on page 9, third paragraph, of the specification, low speed digital signals can be synchronized to apply time division multiplexing without using an overhead associated with a client signal. In contrast, Doshi et al. transports signals of higher layers above an IP packet layer (i.e., third layer) transparently. That is, Doshi et al. merely discloses so-called "payload transparency". Thus, the above-described advantageous effect according to the present invention cannot be obtained from Doshi et al. Specifically, Doshi et al. also fails to disclose or suggest a feature of the present invention that applies time division multiplexing to the whole of the client signal including client overhead transparently... Doshi et al. also fails to discloses or suggest a feature of the present invention that attaches an additional overhead to a client signal to which time division multiplexing is applied, that is, to add another overhead separate from an overhead contained in the client signal ... the invention".

In response Examiner respectfully disagrees and asserts the Doshi et al. reference, as clearly pointed out in the Office Action, does indeed anticipate the claimed invention for the rationales stated above and as followings:

Let's revisit Doshi et al reference! Doshi et al.'s Backbone router node (WDM-TM) depicted in Figure 6, on page 141, is no doubt corresponding to the disclosed transport system of Fig. 3 being disclosed on page 13 and thereinafter in the specification. The claimed "TDM" of Fig. 3, is corresponding to the SC side of the Doshi et al.'s WDM-TM. The TDM function and an additional OH insertion and termination function are provided at the entry/exit points of the WDM-NW of Fig. 3. These functions are implicitly and inherently included in Doshi et al's WDM-TM as discussed in so many

words on page 141 and thereinafter (*i.e. in TDM systems (e.g., SONET) capacity scaling is achieved by increasing the rate of transmission. With WDM, capacity scaling is done by transmitting multiple TDM signals, each with a different wavelength, on the same fiber*) because of the IP over SONET signals from the SC side of the WDM-TM being transmitted using different wavelength as coming out from WDM-TM. Contradistinction to the Applicants' arguments, Doshi et al do indeed disclose the claimed invention is a manner set forth in the claims.

Examiner believes an earnest attempt has been made in addressing all of the Applicants' arguments. Due to the amendment fails to place the application in a favorable condition for allowance and the arguments are not persuasive, the rejection is maintained.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Jha (USP 6,778,561).

Gambini et al, Transparent Optical Packet Switching: Network Architecture and Demonstrators in the KEOPS Project, IEEE, pages 1245-1259, 1998.

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Frank Duong whose telephone number is (571) 272-3164. The examiner can normally be reached on 7:00AM-3:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Seema Rao can be reached on (571) 272-3174. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Frank Duong
Examiner
Art Unit 2666

December 17, 2004